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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,380	10/16/2003	Shinji Maekawa	740756-2660	9762
22204	7590	05/30/2006	EXAMINER	
NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128			GOODWIN, DAVID J	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/685,380

Applicant(s)

MAEKAWA, SHINJI

Examiner

David Goodwin

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 10-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 37, 45, 55 and 56 is/are rejected.
- 7) ☒ Claim(s) 46-54 and 57 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/16/03 04/06/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 46 is objected to because of the following informalities: Claim 46 line 10 recites "reducing defects in the crystalline semiconductor film" it is unclear where said defects originated.
2. Claims 47 through 54 and 57 are objected to as being dependent on claim 46.
3. Appropriate correction is required.

### ***Claim Objections***

1. Claims 37 through 45 and 56 objected to because of the following informalities:
2. The claim recites in lines 3 and 4, "forming a crystalline semiconductor film containing a metal element over a transparent substrate." In lines 5 and 6 on the following page the claim recites, "forming a crystalline semiconductor film containing a metal element over a transparent substrate."
3. This appears to be an erroneous duplication of claim language as the specification does not teach forming two semiconductor layers over the transparent substrate.
4. Claims 38 through 45 and 56 are objected to as depending from and incorporating claim 37.
5. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 3, 7, 8, and 55 are rejected under 35 U.S.C. 102(e) as being anticipated by Grigoropoulos (US 2003/0003636).
3. Regarding claim 1.
4. Grigoropoulos teaches a method of making a semiconductor device. Said method comprises providing a transparent substrate (102) and forming a semiconductor film (104) thereon (fig 1) (paragraph 0028). Said semiconductor film having undergone metal induced crystallization (paragraph 0080) which would introduce metal into the film and result in crystallinity. Said film (104) is subjected to irradiation by a second laser beam (108) in a direction from the direction of the semiconductor(104) layer to the substrate (102). A first laser beam (106) coming from the side of the transparent substrate (102) to the semiconductor layer (104) irradiates the film (104) after the expiration of the second laser beam (108) (fig 1) (paragraph 0029).
5. Regarding claim 2.
6. The first and second laser beams are pulsed (paragraph 0006). The first laser source used is an argon laser (paragraph 0028) which generates a wavelength between that of visible light and vacuum ultraviolet.
7. Regarding claim 3.
8. The first laser source used is an argon laser (paragraph 0028) a gas laser.

9. Regarding claim 4.
10. The laser source of the second laser beam (108) is an excimer laser (paragraph 0028).
11. Regarding claim 5.
12. Said excimer laser comprises a KrF laser (paragraph 0028).
13. Regarding claim 7.
14. The first laser beam source (106) is an argon laser (paragraph 0028).
15. Regarding claim 8.
16. The first laser beam source (106) is an argon laser (paragraph 0028).
17. Regarding claim 55.
18. Said semiconductor film having undergone metal induced crystallization of an amorphous layer (paragraph 0080). Metal induced crystallization of an amorphous semiconductor comprises providing an amorphous layer, adding metal thereto, and annealing said layer to form a crystalline layer.

***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grigoropoulos (US 2003/0003636) in view of Ogawa (US 6,884,699).

21. Grigoropoulos teaches all elements of the claimed invention above in the rejection of claim 1.

22. Grigoropoulos does not teach that the laser sources may comprise a YAG laser.

23. Ogawa teaches a method of recrystallizing a semiconductor layer. Said method comprises a laser wherein the laser comprises the second harmonic of a YAG source (column 13 lines 10-25).

24. It would have been obvious to one of ordinary skill in the art to use a second harmonic of a YAG laser in the recrystallization of a semiconductor film because it is well known in the art to do so and would permit greater latitude and control over the process.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Goodwin whose telephone number is (571)272-8451. The examiner can normally be reached on Monday through Friday, 9:00am through 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571)272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJG

  
ANDY HUYNH  
PRIMARY EXAMINER